

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2021-0546; Project Identifier MCAI-2021-00387-P; Amendment 39-21815; AD 2021-23-17]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Hoffmann GmbH & Co. KG Propellers**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** The FAA is superseding Airworthiness Directive (AD) 2020-25-05 for all Hoffmann GmbH & Co. KG (Hoffmann) model HO-V 72 propellers. AD 2020-25-05 required amending the existing aircraft flight manual (AFM) with abnormal propeller vibration instructions. AD 2020-25-05 also required visual inspection and non-destructive test (NDT) inspection of the propeller hub and, depending on the results of the inspections, replacement of the propeller hub with a part eligible for installation. AD 2020-25-05 also required replacement of the propeller hub before exceeding 30 years since the date of manufacture. This AD was prompted by reports of cracks at different positions on two affected propeller hubs and subsequent manufacturer revision of the service information, which showed that the 30-year life limit of the propeller hub is no longer needed. This AD requires amending the existing AFM by inserting abnormal propeller vibration instructions, visual inspection and NDT inspection of the propeller hub and, depending on the results of the inspections, replacement of the propeller hub with a part eligible for installation. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective January 10, 2022.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of January 10, 2022.

**ADDRESSES:** For service information identified in this final rule, contact Hoffmann GmbH & Co. KG, K pferlingstrasse 9, 83022, Rosenheim, Germany; phone: +49 0 8031 1878 0; email: <https://hoffmann-prop.com>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0546.

## Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0546; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is Document Operations, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Michael Schwetz, Aviation Safety Engineer, Boston ACO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7761; fax: (781) 238-7199; email: michael.schwetz@faa.gov.

## SUPPLEMENTARY INFORMATION:

### Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2020-25-05, Amendment 39-21347 (85 FR 78702, December 7, 2020), (AD 2020-25-05). AD 2020-25-05 applied to all Hoffmann model HO-V 72 propellers. The NPRM published in the Federal Register on July 6, 2021 (86 FR 35416). The NPRM was prompted by reports of cracks at different positions on two affected propeller hubs and subsequent manufacturer revision of the service information, which showed that the 30-year life limit of the propeller hub is no longer needed. In the NPRM, the FAA proposed to continue to require amending the existing AFM with abnormal propeller vibration instructions. In the NPRM, the FAA also proposed to continue to require visual inspection and NDT inspection of the propeller hub and, depending on the results of the inspections, replacement of the propeller hub with a part eligible for installation. The FAA is issuing this AD to address the unsafe condition on these products.

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2020-0226R1, dated March 31, 2021 (referred to after this as “the MCAI”), to address the unsafe condition on these products. The MCAI states:

Cracks have been reported at different positions on two affected parts, both installed on Slingsby T67 “Firefly” aeroplanes. One crack was found during scheduled inspection, the other crack during an unscheduled inspection after abnormal vibrations occurred. Both cases are under investigation by Hoffmann Propeller.

This condition, if not detected and corrected, could lead to in-flight propeller detachment, possibly resulting in damage to the airplane and/or injury to persons on the ground.

To address this potential unsafe condition, Hoffmann issued the SB, providing applicable instructions.

For the reasons described above, EASA issued Emergency AD 2020-0226-E to require inspections of affected parts and, depending on findings, replacement, and introduces a life limit for affected parts. That [EASA] AD also required, for certain aeroplanes, amendment of the applicable Aircraft Flight Manual (AFM).

Since that [EASA] AD was issued, recent analyses of inspection results showed that the life limit of 30 years is no longer necessary and Hoffmann Propeller issued Revision D of the SB accordingly.

This [EASA] AD is revised to delete the life limit and to introduce a clarification for corrective action(s) during overhaul in paragraph (6) [of EASA AD].

You may obtain further information by examining the MCAI in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0546.

## **Discussion of Final Airworthiness Directive**

### **Comments**

The FAA received comments from one individual commenter. The individual commenter supported the NPRM without change.

### **Clarification of Required Actions**

The FAA revised paragraph (g), Required Actions, of this AD by clarifying that the propeller hub must be replaced with a part eligible for installation if any crack is detected during an overhaul inspection.

### **Conclusion**

The FAA reviewed the relevant data, considered the comment received, and determined that air safety requires adopting the AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. This AD is adopted as proposed in the NPRM.

### **Related Service Information Under 1 CFR Part 51**

The FAA reviewed Hoffmann Propeller GmbH & Co. KG Service Bulletin SB E53, Rev. D, dated February 18, 2021. The service bulletin describes procedures for visual and NDT inspections of the propeller hub for cracks. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

### **Costs of Compliance**

The FAA estimates that this AD affects 35 propellers installed on airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

| <b>Estimated Costs</b>         |                                    |                   |                         |                               |
|--------------------------------|------------------------------------|-------------------|-------------------------|-------------------------------|
| <b>Action</b>                  | <b>Labor cost</b>                  | <b>Parts cost</b> | <b>Cost per product</b> | <b>Cost on U.S. operators</b> |
| Amend AFM                      | 1 work-hour × \$85 per hour = \$85 | \$0               | \$85                    | \$2,975                       |
| Visually inspect propeller hub | 1 work-hour × \$85 per hour = \$85 | 0                 | 85                      | 2,975                         |

|                           |                                      |   |     |        |
|---------------------------|--------------------------------------|---|-----|--------|
| NDT inspect propeller hub | 8 work-hours × \$85 per hour = \$680 | 0 | 680 | 23,800 |
|---------------------------|--------------------------------------|---|-----|--------|

The FAA estimates the following costs to do any necessary replacements that would be required based on the results of the mandated inspections. The FAA has no way of determining the number of aircraft that might need this replacement:

#### **On-Condition Costs**

| <b>Action</b>         | <b>Labor cost</b>                    | <b>Parts cost</b> | <b>Cost per product</b> |
|-----------------------|--------------------------------------|-------------------|-------------------------|
| Replace propeller hub | 5 work-hours × \$85 per hour = \$425 | \$1,600           | \$2,025                 |

### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

#### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by:

- a. Removing Airworthiness Directive 2020-25-05, Amendment 39-21347 (85 FR 78702, December 7, 2020); and
- b. Adding the following new airworthiness directive:



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**2021-23-17 Hoffmann GmbH & Co. KG:** Amendment 39-21815; Docket No. FAA-2021-0546; Project Identifier MCAI-2021-00387-P.

**(a) Effective Date**

This airworthiness directive (AD) is effective January 10, 2022.

**(b) Affected ADs**

This AD replaces AD 2020-25-05, Amendment 39-21347 (85 FR 78702, December 7, 2020).

**(c) Applicability**

This AD applies to all Hoffmann GmbH & Co. KG model HO-V 72 propellers.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 6114, Propeller Hub Section.

**(e) Unsafe Condition**

This AD was prompted by reports of cracks at different positions on two affected propeller hubs. The FAA is issuing this AD to prevent failure of the propeller hub. The unsafe condition, if not addressed, could result in release of the propeller, damage to the airplane, and injury to persons on the ground.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

(1) Before the next flight after December 22, 2020 (the effective date of AD 2020-25-05), amend the existing aircraft flight manual by inserting the procedure: "Abnormal propeller vibrations: As applicable, reduce engine RPM."

(2) Before the next flight after the effective date of this AD, and thereafter, before the next flight after any flight where abnormal propeller vibrations have been experienced, visually inspect propeller hub HO-V 72 ( ) ( )-( )-( ) for cracks using paragraph 2.1 of Hoffmann Propeller GmbH & Co. KG Service Bulletin SB E53, Rev. D, dated February 18, 2021 (the SB).

(3) Within 20 flight hours after the effective date of this AD, perform a non-destructive test (NDT) inspection of propeller hub HO-V 72 ( ) ( )-( )-( ) using paragraph 2.3 of the SB.

(4) During each overhaul of propeller hub HO-V 72 ( ) ( )-( )-( ) after the effective date of this AD, perform an NDT inspection using paragraph 2.3 of the SB.

(5) If, during any inspection required by paragraph (g)(2), (3), or (4) of this AD, any crack is detected, replace propeller hub HO-V 72 ( ) ( )-( )-( ) with a part eligible for installation.

**(h) Definition**

For the purpose of this AD, a “part eligible for installation” is a propeller hub HO-V 72 ( ) ( )-( )-( ) with zero hours time since new or a propeller hub HO-V 72 ( ) ( )-( )-( ) that has passed an NDT inspection using paragraph 2.3 of the SB.

**(i) Non-Required Actions**

(1) Sending the propeller to Hoffmann for investigation, as contained in paragraph 2.1 of the SB, is not required by this AD.

(2) Reporting propeller hubs with cracks to Hoffmann, as contained in paragraph 2.3 of the SB, is not required by this AD.

**(j) Credit for Previous Actions**

You may take credit for the initial visual inspection and NDT inspection of the propeller hub required by paragraphs (g)(2), (3), and (4) of this AD if you performed any of these actions before the effective date of this AD using Hoffmann Propeller GmbH & Co. KG SB E53, Rev. A, dated October 9, 2020; Rev. B, dated October 14, 2020; or Rev. C, dated December 9, 2020.

**(k) Special Flight Permit**

A special flight permit may be issued in accordance with 14 CFR 21.197 and 21.199 to operate the airplane to a service facility to perform the NDT inspection. Special flight permits are prohibited to perform the visual inspection of the propeller hub.

**(l) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Boston ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (m)(1) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(m) Related Information**

(1) For more information about this AD, contact Michael Schwetz, Aviation Safety Engineer, Boston ACO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7761; fax: (781) 238-7199; email: michael.schwetz@faa.gov.

(2) Refer to European Union Aviation Safety Agency (EASA) AD 2020-0226R1, dated March 31, 2021, for more information. You may examine the EASA AD in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0546.

**(n) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Hoffmann Propeller GmbH & Co. KG (Hoffmann) Service Bulletin SB E53, Rev. D, dated February 18, 2021.

(ii) [Reserved]

(3) For Hoffmann service information identified in this AD, contact Hoffmann GmbH & Co. KG, K pferlingstrasse 9, 83022, Rosenheim, Germany; phone: +49 0 8031 1878 0; email: <https://hoffmann-prop.com>.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on November 4, 2021.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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